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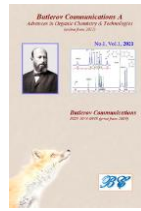

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Synthesis of complex compounds of calcium(II) ions with amino acids

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Abstract

This paper shows the synthesis of complexes of calcium(II) were synthesized with amino acids from aqueous solutions of calcium tetrahydro-nitrate salts and from solutions of relevant amino acids, namely isoleucine, glycine, phenylalanine, cysteine, tryptophan, glutamic acid. Spectroscopic characteristics of the synthesized compounds are presented by the method of Fourier transform infrared spectroscopy. Variety of the studied samples were recorded in the range from 400 to 4000 cm^{-1}. The morphology and shape solid phase particles were explored by optical microscopy method using an electron microscope, calcium solid phase produced by the method presented in this work were used as the test material. Formation of the complex compounds (the calcium ion(II)-amino acids type) has been proved in molar ratios of metal-amino acid – 1:2; 2:1. The presence of a covalent linkage is established formed by the acceptor/donor mechanism with lone pair of electrons, nitrogen atom amino groups of amino acids and calcium(II) ion and also with a calcium(II) ion with a carboxyl ionic group of amino acids. Prepared compounds they will find application in production of drugs, where they can be used as the main component. The data obtained on the specific types of amino acid coordination will be able to increase the prediction reliability for structure of compounds, which are poorly studied and to provide new opportunities for improving directed synthesis methods for complexes of a specific structure and composition. Also it can fundamentally contribute to studies areas of biochemistry that consider bioprocesses regulation using metal ions.

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